DNREC Virtual Public Hearing

Clean Delaware LLC's Permit Renewal

(Docket #2022-P-W-0005)

Welcome. Any visual content that is part of this hearing will appear in this window.

Computer Audio: Use the **audio connections menu** to turn audio on or off.
Telephone Audio: DIAL-in Number: 1-408-418-9388
Access code: 2345 394 4933
Comments will be accepted using the DNREC Comment form, via email, or by USPS mail as noted on the hearing event page (de.gov/dnrechearings)

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NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL

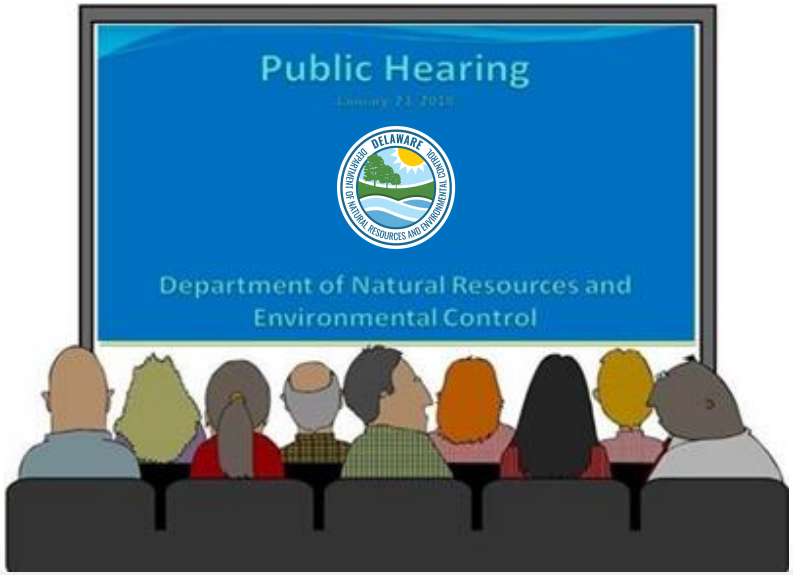
Public Hearing Exhibits

- Exhibit 1: Permit Application and Project Development Report
- Exhibit 2: Hearing Legal Notices
- Exhibit 3: Guidance and Regulations Governing the Land Treatment of Wastes
- Exhibit 4: State Calendar Posting of Hearing
- Exhibit 5: DNREC's Presentation
- Exhibit 6: Draft Agricultural Utilization Permit
- Exhibit 7: Public Comments (as received)

Virtual Public Meeting - Purpose

- Provide the public with an opportunity to comment on the Clean Delaware permit application for the renewal of the current agricultural utilization (AGU) permit.

- Provide the public with an opportunity to ask DNREC and the applicant questions related to the permit application.



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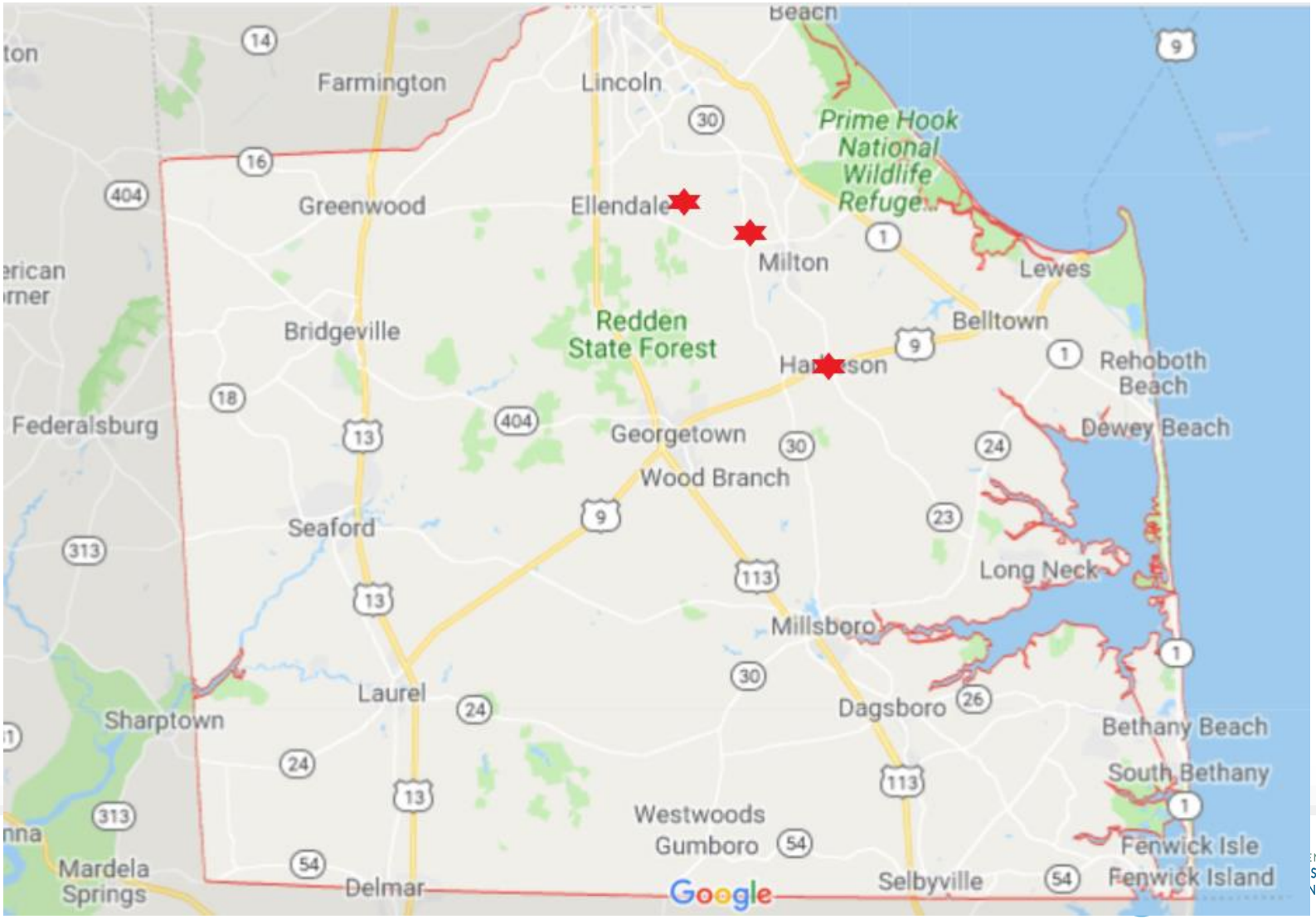
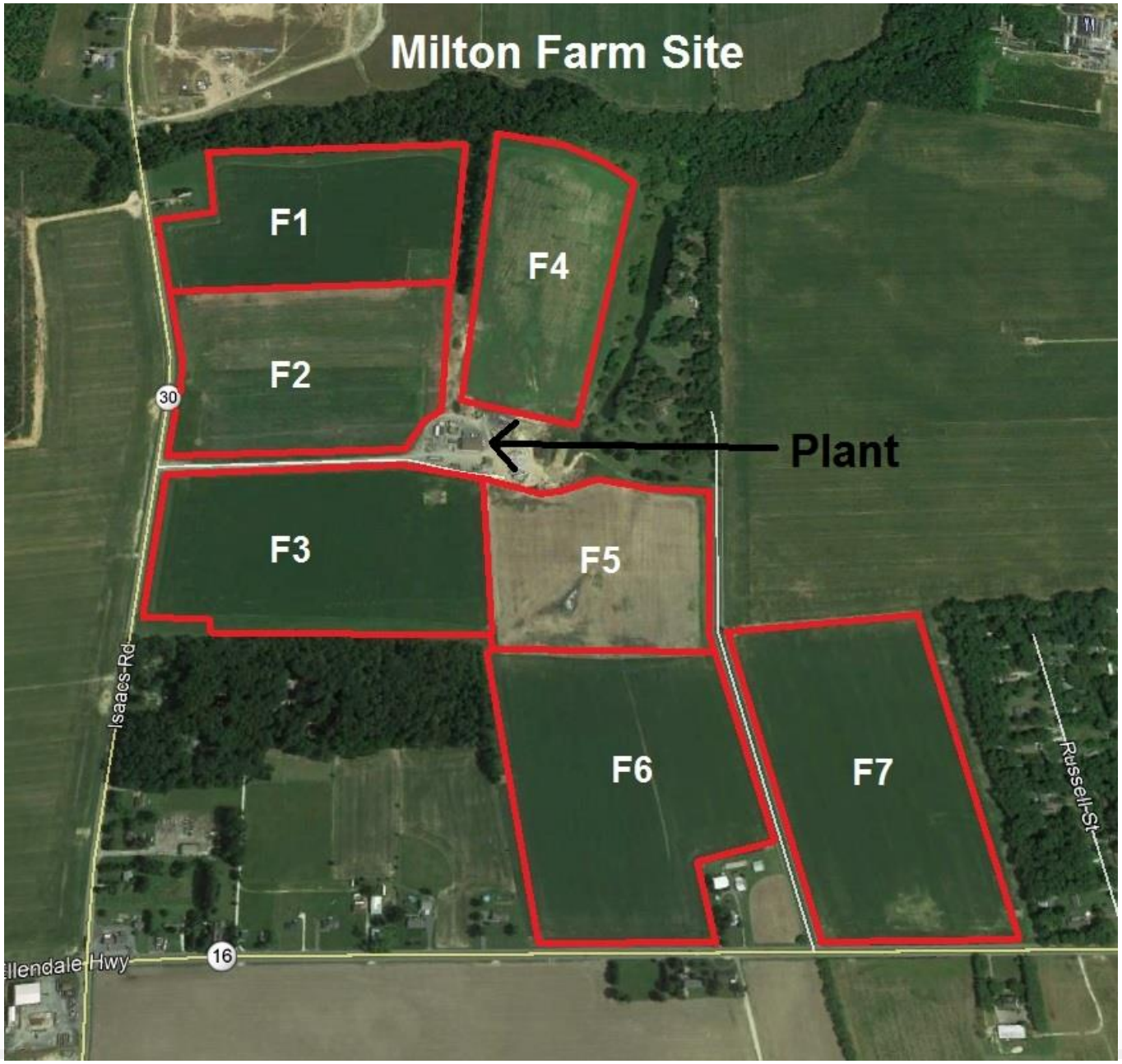
Overview of Clean Delaware's Land Application Business

- Clean DE applies certain land treatable wastes, as approved by DNREC, to permitted land at an agronomic rate (N loading rate for crops) as fertilizer.
- Products include Class B biosolids, Class B septage, grease trap waste, brewery wastewater, and vegetable processing residuals.
- Operation began in the late 1980s as Clean Delaware, Inc. and is now known as Clean Delaware, LLC. (ownership changed in 2004).

Location of Clean Delaware's Three Land Application Farms





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Harbeson Farm Site

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The New Market Site was requested to be removed from the permit and was not included as part of the permit application.

What is Septage?

- Septage is not raw sewage from a septic system. Septage is sewage pumped from a septic tank that has been treated by a Class B PSRP

What are Biosolids?

- Biosolids are **not** raw sewage. They are one of the final products from the treatment of municipal wastewater at a wastewater treatment plant that have undergone a Class B process to significantly reduced pathogens (PSRP).

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What are Biosolids - Continued?

- After treatment breaks down/digests the organic compounds and greatly reduces disease–causing organisms in wastewater, only then are the remaining fine particles are ultimately considered Class B **biosolids** which are a nutrient-rich organic product that can be utilized on crops like animal manure (N and P).

Why are Biosolids and other Wastes Land Applied

- Biosolids contain essential nutrients for plant growth, such as nitrogen, phosphorus, zinc, copper, and more
- They contain slow-release nitrogen, which helps reduce the potential of the leaching of nitrogen to groundwater
- Over time, application of biosolids increases the organic content of soil, resulting in improved water holding capacity and soil quality

How are Biosolids Regulated?

- Federal – EPA = 40 Code of Federal Regulations (CFR) Part 503 – Standards for the Use or Disposal of Sewage Sludge
- State of Delaware – DNREC = Guidance and Regulations Governing the Land Treatment of Wastes (7 Del. Admin. C. §7103)
  - Part III "Land Treatment of Sludges and Sludge"
  - Part V "Land Treatment of Waste Products"

Key Class B Land Application Site Requirements and Restrictions

- Sampling of the **biosolids** that will be land applied **and** the **soil** they are applied onto (many parameters including nutrients, metals, percent solids, pH, etc.)
- A detailed soils analysis and a report prepared by a Certified Professional Soil Scientist is required before any site is approved – this is done to determine site suitability for land ap. and delineate areas not suitable for land ap.
- 20" separation from depth of tillage to seasonal high GW table (historic data shows at least 7'+ of separation)
- Groundwater monitoring requirements
- Permittee is required to track all biosolids application and apply material at an agronomic rate in accordance with a plan developed by a DE Certified Nutrient Consultant.

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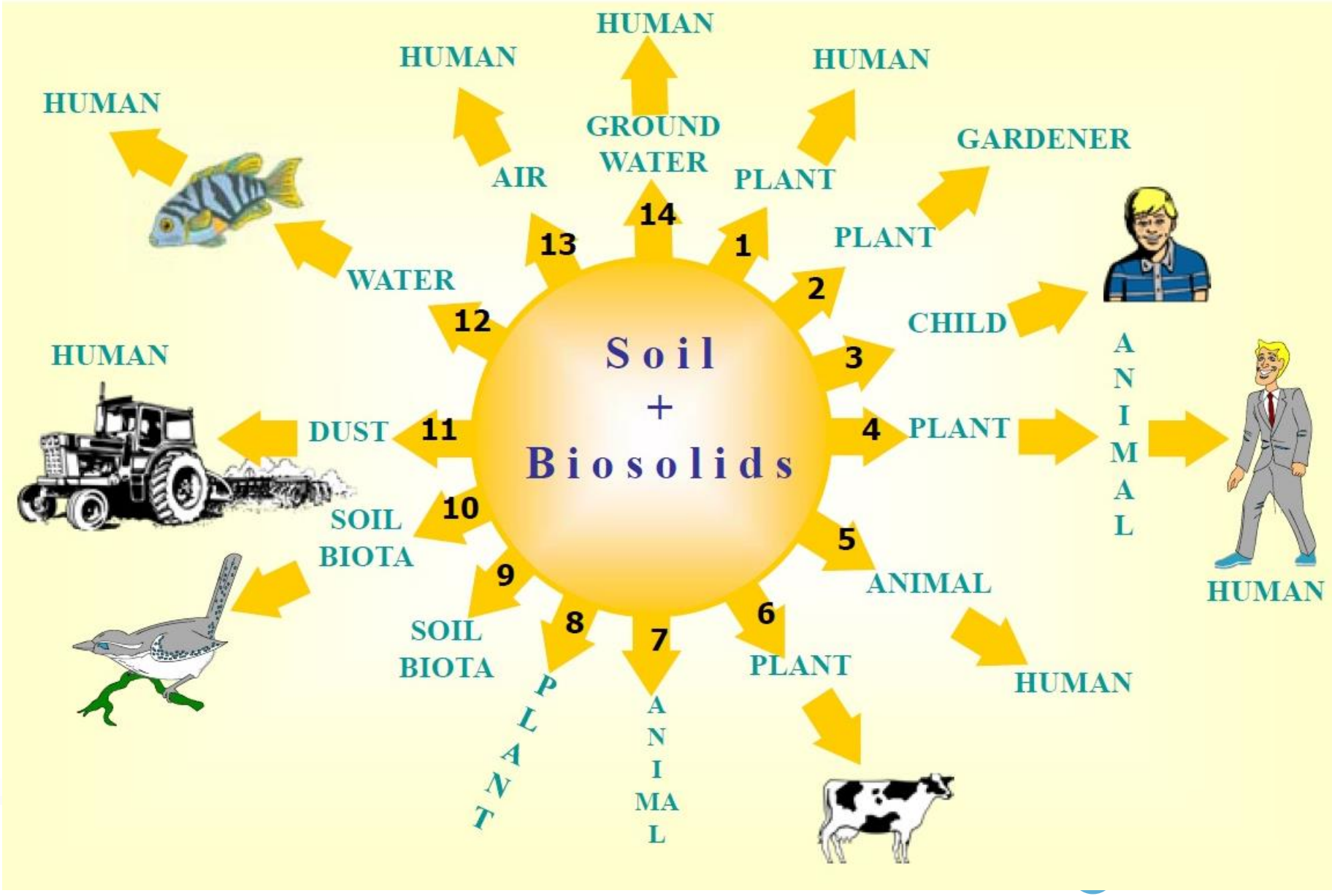
Key Class B Land Application Site Requirements and Restrictions

- Buffers zones from wells, streams, ditches, property lines, houses, etc. must be maintained
- Adverse weather condition restrictions (rain and snow)
- Crop harvest restrictions (length of time dependent on type of crop)
- Public access restrictions
- Cover crops required in winter after application

Biosolids Pathogen Reduction Requirements

- All biosolids (treated sanitary/human waste) must undergo one of the EPA approved PSRP to be characterized as "Class B" biosolids.
- For septage, pH is raised to 12 for at least 2 hours.
- Other biosolids materials – one of several regulatory options in regulations must be met prior to land application at Clean Delaware.

14 - Pathway Risk Assessment



“Emerging Contaminants”

- Emerging contaminants are pollutants that have been detected in wastewater, where additional research is needed to determine their risk or refine their known risk to human health and the environment.
- Every 2 years, EPA is required to refine risk assessments and look at contaminants that are present in biosolids.
- The EPA is required to establish numeric limits and management practices that protect public health and the environment from the reasonably anticipated adverse effects of chemical and microbial pollutants during the use or disposal of biosolids.

“Emerging Contaminants”

- EPA’s risk assessments determine whether new or revised numeric standards are warranted under EPA’s biosolids regulations.
- According to EPA, addressing the uncertainty around potential risk for pollutants identified in biosolids is the top priority for the EPA’s Biosolids Program.

✓DNREC will implement any new biosolids standards developed by EPA

https://www.epa.gov/biosolids/biennial-reviews-sewage-sludge-standards

Clean Delaware Septage Pathogen Reduction

Clean Delaware Septage Application

Biosolids and other Land Treatable Waste Application Methods

Nutrient Management

- Land applied products contain N and P - utilized as a fertilizer.
- Nitrogen is required to be applied up to an agronomic rate (crop nitrogen requirement)
- Loading rate recommendations are determined by a DE Certified Nutrient Consultant

Nutrient Uptake

Crop roots take up and utilize nutrients from land applied products.

Crops Removing Nutrients from Soil

Minimum Application Buffers

Buffers are required to be maintained from dwellings, wells roads, streams, ponds, etc.

	Surface Application	Surface Injection
Occupied off-site dwelling	200 feet	100 feet
Occupied on-site dwelling	100 feet	50 feet
Potable wells	100 feet	100 feet
Non-potable wells	25 feet	25 feet
Public roads	25 feet	15 feet
Property lines	50 feet	25 feet
Streams, tidal waters, or other water bodies	50 feet	33 feet
Drainage ditches	25 feet	25 feet

Modifications to Permit

State Permit Number: AGU 21XX-S-03
Effective Date: June 1, 2021
Expiration Date: May 31, 2026

AUTHORIZATION TO OPERATE A LAND TREATMENT SYSTEM

FOR THE

AGRICULTURAL UTILIZATION OF SLUDGE AND WASTE PRODUCTS

Pursuant to the provisions of 7 Del. C., §6003

Clean Delaware, LLC.
P. O. Box 123
Milton, Delaware 19968-0123

is hereby granted a permit to operate a land treatment system for:

- the agricultural utilization of Class B stabilized sludge generated in the treatment of wastewater in Delaware and other land treatable wastes approved by the Department of Natural Resources and Environmental Control; and,
- the agricultural utilization of lime stabilized septage and holding tank waste.

This permit is limited to the application of above materials to the application site(s) designated in this permit.

The application rates, monitoring requirements and other permit conditions are set forth in Parts I, II and III hereof.

Manager Name, Program Manager
Surface Water Discharges Section
Division of Water
Department Of Natural Resources
and Environmental Control

Date Signed

2019 Permit Modification Request and Public Hearing

- A modification request was received by DNREC from Clean DE and a public hearing on the permit amendment was held in November of 2019.
- DNREC was unable to complete Secretary's Order process prior to the renewal of State Permit Number AGU 1702-S-03.
- Requested modifications from 2019 are incorporated into this permit renewal and DNREC incorporated some changes to the draft permit in consideration of public comments received in 2019.

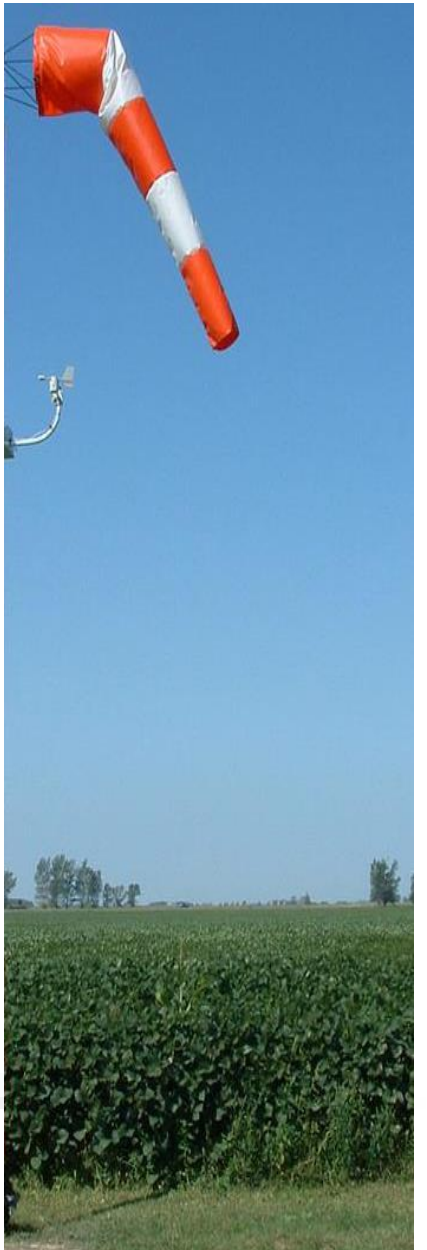
New - Buffer Distances for Septage Added in Draft Amended Permit

The following minimum application setback distances shall be maintained for septage application:

	Minimum Setback Distance
Public roads	150 feet
Property lines of off-site properties with occupied dwellings	500 feet
Any on-site occupied dwelling	500 feet*
Streams, tidal waters, or other water bodies	100 feet

Wind Limitations for Septage (New)

- Anemometer and windsock is now installed at the Milton Farm.
- Septage shall not be applied when sustained wind exceeds 10 mph or wind gusts exceed 15 mph.
- Permittee shall ensure that any aerosols created by land application does not carry beyond the property boundaries.



Improved Land Ap. Practices

- Application of wastes onto a vegetative cover crop to minimize leaching of N to groundwater. (new)
  - This practice allows for continuous nutrient uptake while minimizing nitrogen loss to groundwater.
  - Will help maintain soil structure, minimize compaction, and reduce rutting in the fields.
- Length of time field permitted without a crop minimized (< 1 month) for biosolids application.
- Cover crops are required to be utilized during winter months for all fields
- For Milton Farm fields 6 and 7 - application will be limited to April 1 through October 15

More Stringent Metals Limits for all Products Applied by Clean DE (New)

All products applied by Clean DE have consistently been under the "pollutant concentration limits" listed below.

Arsenic	41 mg/kg	Cadmium	39 mg/kg	Chromium	1200 mg/kg	Copper	1500 mg/kg
Lead	300 mg/kg	Mercury	17 mg/kg	Molybdenum	18 mg/kg	Nickel	420 mg/kg
PCB's	3 mg/kg	Selenium	36 mg/kg	Zinc	2800 mg/kg	-	- -

Based on EPA's risk assessment, biosolids applied with metals under the pollutant concentration limits pose no adverse effect thus tracking cumulative metal loading rates is not necessary.

Proposed Changes to Metal Sampling Frequency for **Wastes**

- Metals in Clean Delaware wastes have always been well under EPA/DNREC risk based "pollutant concentration" metal limits for land application.
- Current requirement every 3 years. Proposed frequency ever 5 years (once per permit cycle).
- Biosolids sampling frequency requirement will remain unchanged (annually).

Proposed Sampling Frequency for **Wastes**

Parameter	Measurement	Sampling Frequency	Sample Type
Moisture content	percent	Quarterly*	Composite
Total Nitrogen as N (dry weight basis)	percent	Quarterly*	Composite
Organic Nitrogen as N (dry weight basis)	percent	Quarterly*	Composite
Ammonium and Nitrate Nitrogen as N (dry weight basis)	percent	Quarterly*	Composite
Phosphorus (dry weight basis)	percent	Quarterly*	Composite
Potassium (dry weight basis)	mg/kg	Quarterly*	Composite
pH	S.U.	Annually	Composite
Arsenic (dry weight basis)	mg/kg	Every 5 Years	Composite
Cadmium (dry weight basis)	mg/kg	Every 5 Years	Composite
Chromium (dry weight basis)	mg/kg	Every 5 Years	Composite
Copper (dry weight basis)	mg/kg	Every 5 Years	Composite
Iron (dry weight basis)	mg/kg	Every 5 Years	Composite
Lead (dry weight basis)	mg/kg	Every 5 Years	Composite
Mercury (dry weight basis)	mg/kg	Every 5 Years	Composite
Molybdenum (dry weight basis)	mg/kg	Every 5 Years	Composite
Nickel (dry weight basis)	mg/kg	Every 5 Years	Composite
Selenium (dry weight basis)	mg/kg	Every 5 Years	Composite
Zinc (dry weight basis)	mg/kg	Every 5 Years	Composite

Proposed Changes for Sampling Frequency of Metals in **Soils**

- Relax frequency from every 3 years to every 5 years (once per permit cycle).
- Metals are well below risk-based standards in the materials land applied thus metals accumulation in the soil will not occur.
- Soil data spans over 30 years and demonstrates metals in soil continue to be well below standards and are not accumulating in the soil.

Proposed **Soil** Sampling Requirement Frequency for Metals

Parameter	Measurement	Sampling Frequency	Sample Type
% Organic Matter	percent	Annually	Composite
Phosphorus (dry weight basis)	mg/kg	Annually	Composite
Potassium (dry weight basis)	mg/kg	Annually	Composite
Sodium (dry weight basis)	mg/kg	Annually	Composite
pH	S.U.	Annually	Composite
Arsenic (dry weight basis)	mg/kg	Every 5 Years	Composite
Cadmium (dry weight basis)	mg/kg	Every 5 Years	Composite
Chromium (dry weight basis)	mg/kg	Every 5 Years	Composite
Copper (dry weight basis)	mg/kg	Every 5 Years	Composite
Iron (dry weight basis)	mg/kg	Every 5 Years	Composite
Lead (dry weight basis)	mg/kg	Every 5 Years	Composite
Mercury (dry weight basis)	mg/kg	Every 5 Years	Composite
Molybdenum (dry weight basis)	mg/kg	Every 5 Years	Composite
Nickel (dry weight basis)	mg/kg	Every 5 Years	Composite
Selenium (dry weight basis)	mg/kg	Every 5 Years	Composite
Zinc (dry weight basis)	mg/kg	Every 5 Years	Composite

Removal of Monthly Groundwater Depth Gauging Requirement

Clean Delaware Bio-Solids Application Projects

Summary of Record High Water Table Elevations and Estimates Depth to Groundwater

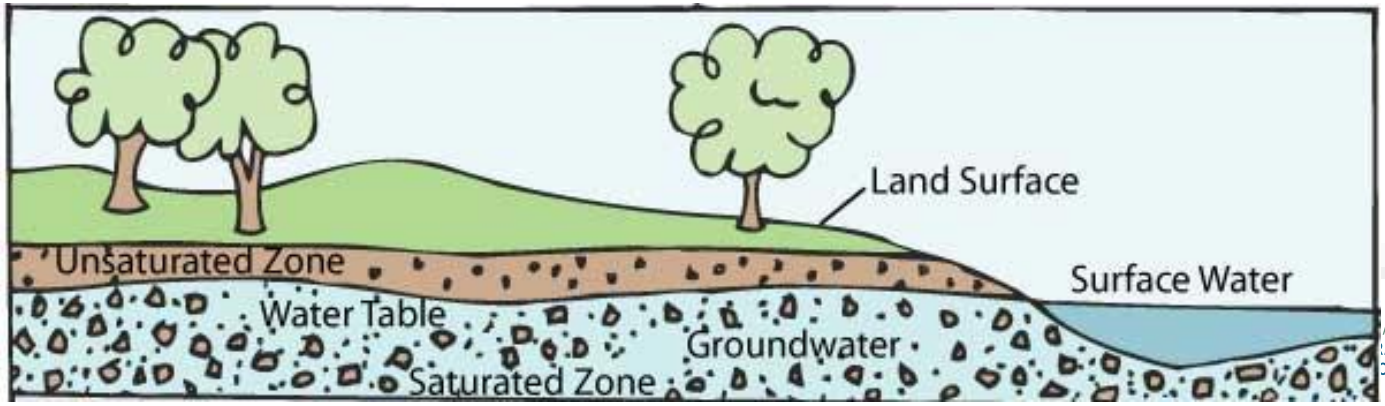
Well Number	Top of Well Casing Elevation	Highest Recorded Groundwater Elevation	Date	Estimated Depth to Water from Ground Surface at Record High*
242592	34.24	23.14	March 2021	8
242593	34.07	19.05	November 2018	12
242954	36.18	20.58	March 2021	12.6
242949	28.92	18.78	November 2018	7.1
242950	29.68	19.54	March 2019	7.1
242951	36.76	22.45	March 2021	11.3
242952	31.87	20.57	March 2021	8.3
242953	34.80	17.50	March 2021	14.3
242954	34.33	16.83	March 2021	14.3
242955	34.64	23.64	February 2021	8
242956	33.36	21.39	March 2021	9

DNREC Inspections

- DNREC routinely inspects approved farms during application activities to ensure compliance with permit conditions.
- DNREC routinely inspects farms after land application activities to ensure appropriate crops are planted.
- DNREC's permit requirements are designed to protect human health and the environment.

Groundwater

- Historically, groundwater monitoring was not required at biosolids application sites.
- In 2013, Clean Delaware installed a network of groundwater monitoring wells.
- Impacts from nitrates were identified in groundwater at the application sites.



Groundwater Monitoring

- Upon identifying groundwater impacts in 2013, DNREC in cooperation with Clean Delaware sampled all surrounding private drinking water wells*.
- Clean Delaware provided treatment for nitrate for all impacted wells identified*.
- Reduction in application activities and improved BMP's were implemented – nitrate levels in shallow groundwater reduced over time.

* This does not include situations where property owners and/or tenants rejected assistance.

Testing Your Private Drinking Water Well

- Both the US EPA and the CDC recommend **annual sampling of ALL private wells in the U.S**. to ensure acceptable drinking water quality.
- Test kits are available for private well owners through DDPH for $4 in Georgetown, Dover, Smyrna, Newark.
- For additional information, please visit:

https://www.dhss.delaware.gov/dph/lab/privdw.html



Periodic Testing of Impacted Wells

- A new permit condition has been added requiring periodic monitoring of downgradient potable wells as directed by the Department



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Contact Information

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Surface Water Discharges Section

Land Treatment of Wastes (Biosolids and Residuals)

Phone: 302-739-9946

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DNREC Virtual Public Hearing

HEARING NAME
(Docket #2020-P-W-0005)

Thank you for joining us. We will accept comments on this matter through May 12, 2022.
Comments may be submitted in writing
via DNREC Comment form - https:/dnrec.alpha.delaware.gov/public-hearings/comment-form/
via email- DNRECHearingComments@delaware.gov
or by USPS mail:
Lisa Vest, Hearing Officer
DNREC – Office of the Secretary
89 Kings Highway, Dover, DE 19901
The full verbatim transcript will be posted when it becomes available.
For more information, find the event page for this hearing on the DNREC Public Hearings page
dnrec.alpha.delaware.gov/public-hearings/

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